* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] How to carry out the voice output of the text characterized by what the characteristic word or characteristic abbreviation in a text is inspected by the microprocessor (1), said text is changed into syllable using the algorithm which identifies the language of a text and is formed to the identified language, and is reproduced through a loudspeaker.
[Claim 2] The approach according to claim 1 of choosing the language identified most frequently [in case various words or alphabetic character combinations of language are identified].
[Claim 3] The approach according to claim 1 or 2 of receiving a text within a car by wireless and outputting to the driver of a car.
[Claim 4] The approach according to claim 1 or 2 of resolving the FAX message in the alphabetic character received in the mobile radio unit (3), and outputting in voice.
[Claim 5] In the audio output device for E e-mail system combined with the mobile radio unit (3) An actuation component, and text memory (2) and a microprocessor (1 7), It has the output unit (4, 5, 6), the call to a user's Internet mail box is automatically performed by actuation of said actuation component, and loading of the E-mail which received a message is performed. By said microprocessor The language currently used in the text memorized by text memory (2) is identified based on a predetermined word or a predetermined abbreviation characteristic of language. The audio output device for E e-mail system characterized by what it is changed into the phoneme by which the language with which this text was identified was digitized, and the phoneme digitized by said output unit is outputted for as language.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the audio output device for the approach of carrying out the voice output of the text, and E e-mail system combined with the mobile radio unit.
[0002]
[Description of the Prior Art] It is well-known to output in voice with the language which formed artificially the traffic message by which digital coding was carried out from the publication and the Federal Republic of Germany patent application public presentation No. 19503419 specification. The word relevant to a location thru/or the name of a place is supplied to language formation equipment in the same language as the sentence of affiliation having been taken out from memory. Adaptation-ization with the word of a foreign language and the sound of the sentence which belongs is performed by phoneme conversion.
[0003] Nisus Software and Inc. Text-manipulation program of a shrine Nisus (R) Writer from -- the described voice output of a text or "reading" is known. The language translation algorithm (sentence-voice conversion algorithm) of a proper is used to each language which can output a text in voice. An alphabetic character is changed into the sequence of a phoneme or syllable with this kind of algorithm. A user chooses a suitable language translation algorithm from the menu for one predetermined language. You cannot understand a voice output, when the text exists in the language which is not set to a language translation algorithm.
[0004] In various Field of application, a case to be operated by the user who chooses the language translation algorithm which belongs for receiving the text by predetermined language is inconvenient. Within a car, it is especially the field of the insurance of a driver, and it is advantageous if the voice output of the text is carried out. The condition that the language translation algorithm with which a driver checks the language of a text first and corresponds continuously must be searched for and chosen is conquered partially at least.
[0005] From the European Patent application public presentation No. 0889626 specification, the message transport unit for a communication link subscriber is well-known, and the equipment for the voice-told message (voice mail) recorded here is combined with E e-mail system. E-mail can be outputted to a subscriber with voice. In order to choose the right language translation algorithm suitable for a voice output, the alphabetic character combination (it has three alphabetic character sequences) of E-mail is inspected. Inference over the language currently used is drawn by the frequency of occurrence of an alphabetic character combination. This technique needs big cost for using equipment. With this kind of equipment, the big count capacity for the library to which the big resource in memory and a program operate and **** must be prepared. For this reason, for applying to especially a car, it is not desirable. Furthermore, when a message is short and the special concept by the divulgence word is added, distinction with the high dependability between similar language becomes difficult.
[0006]
[Problem(s) to be Solved by the Invention] the text which the technical problem of this invention offers the approach and audio output device which carry out the voice output of the text, and exists in various language -- efficient -- dependability -- it is reproducing highly and correctly.
[0007]
[Means for Solving the Problem] This technical problem inspects the characteristic word or characteristic abbreviation in a text by the microprocessor, changes a text into syllable using the algorithm which identifies the language of a text and is formed to the identified language, and is solved by reproducing through a loudspeaker. A technical problem again An actuation component, text memory, and a microprocessor, Have the output unit and the call to a user's Internet mail box is automatically performed by actuation of an actuation component. Loading of the E-mail which received a message is performed, and the language currently used in the text memorized by text memory by the microprocessor is identified based on a predetermined word or a predetermined abbreviation

characteristic of language. It is changed into the phoneme by which the language with which the text was identified was digitized, and the phoneme digitized by the output unit constitutes the equipment outputted as language, and is solved. The advantageous operation gestalt of this invention is indicated by the subordination claim.

[0008]

[Embodiment of the Invention] Before starting a voice output, in a text, a predetermined word or a predetermined abbreviation characteristic of language is inspected, and the language of a text is identified. Based on the identified language, the algorithm for text voice outputs of dedication assigned to this identified language is chosen automatically. The phoneme formed artificially by this thru/or syllable, or voice is pronounced correctly.

[0009] For example, when the text in an alphabetic character reaches a private vehicle through radio wireless or a mobile radio especially a mobile phone, a radio data system (RDS), and a short message service (SMS), a text is reproduced by the language which was suitable without actuation by the driver for the language form of a text. This is meaningful especially for the business trip businessman who makes contact to the customer of a foreign language the usual state.

[0010]

[Example] In relation to drawing, it is based on an advantageous example and other advantages of this invention, the description, and the possibility of application are explained.

[0011] The audio output device shown in drawing 1 is built into the multifunctional control unit of a car, and is controlled with automobile radio, a mobile phone, a navigation system, and an air-conditioner.

[0012] The microprocessor 1 has the text memory 2 and this memory is RAM. A microprocessor 1 receives a message, for example, E-mail, or FAX by wireless through a telephone module or the mobile radio unit 3.

[0013] By operating the push button shown by the only actuation component "E", for example, an alphabetic character, a user can operate a microprocessor 1, can form a connection with the mail box of an Internet provider, and can call the E-mail which has received a message. The received text is memorized by the text memory 2 and outputted without actuation of a user.

[0014] If the mobile radio unit 3 receives FAX, it will be changed at FAX in the word using the alphabetic character defined by the software for [as a pixel] text recognition in a contained text, and the text memory 2 will memorize. A microprocessor 1 loads the word which continued and was memorized by the text memory 2, digitizes this as a phoneme, and changes it into the sequence of voice or syllable.

[0015] The digitized phoneme is outputted to an output unit. This output unit consists of a digital to analog converter 4, voice amplifier 5, and at least one loudspeaker.

[0016] A digital to analog converter 4 changes the digitized phoneme into the sound signal of an analog. By voice amplifier 5, this signal is amplified to the loudness level of sound for which a user asks, and is reproduced in voice from a loudspeaker 6.

[0017] A microprocessor 1 inspects the appearance of a typical keyword and an alphabetic character combination in a text in the language which can process each language translation algorithm by this microprocessor. This kind of keyword is the platitude of a name and a greeting, for example, are "Sehr geehrte (r)", "Herr", "Frau", "Dear", "Cher", "Chere", etc. Furthermore, it is based on it and an identifiable article, a pronoun, a conjunction, etc. are simply used in language. The same thing is applied to a typical alphabetic character combination or a typical abbreviation, for example, "H.", "Hr.", "F.", "Fr.", "Mr.", "Ms.", "M.", and "Mme."

[0018] Since the text following a name and it may be held in different language, a microprocessor searchs within a text, after assigning the 1st keyword or the 1st typical alphabetic character combination to actual language. Conflict occurs, and when two or more language has been recognized in the identified characteristic word or characteristic alphabetic character, a decision in majority is made. In that case, a voice output is performed by the language most frequently found out in the text. For this reason, a clerical error does not result in the interpretation error of language.

[0019] The audio output device with which the digital signal processor 7 and Screen 8 for outputting information optically were formed additionally is formed in drawing 2 .

[0020] The mobile radio unit 3 receives text messages, and transmits this to a microprocessor 1. A microprocessor sends out a text to the text memory 2 further.
[0021] The digital signal processor 7 inspects a word characteristic of the language currently used in the text, and an alphabetic character combination, and in order to change language, it chooses the language translation algorithm of affiliation. The phoneme formed artificially is sent out from a signal processor 7 to output units 4, 5, and 6.
[0022] When the message received by the mobile radio unit 3 is FAX, the digital signal processor 7 performs text recognition and inspects the language of a text continuously at the 1st step, and changes the identified alphabetic character into a phoneme.

[Translation done.]

TECHNICAL FIELD

[Field of the Invention] This invention relates to the audio output device for the approach of carrying out the voice output of the text, and E e-mail system combined with the mobile radio unit.

[Translation done.]

PRIOR ART

[Description of the Prior Art] It is well-known to output in voice with the language which formed artificially the traffic message by which digital coding was carried out from the publication and the Federal Republic of Germany patent application public presentation No. 19503419 specification. The word relevant to a location thru/or the name of a place is supplied to language formation equipment in the same language as the sentence of affiliation having been taken out from memory. Adaptation-ization with the word of a foreign language and the sound of the sentence which belongs is performed by phoneme conversion.

[0003] Nisus Software and Inc. Text-manipulation program of a shrine Nisus (R) Writer from -- the described voice output of a text or "reading" is known. The language translation algorithm (sentence-voice conversion algorithm) of a proper is used to each language which can output a text in voice. An alphabetic character is changed into the sequence of a phoneme or syllable with this kind of algorithm. A user chooses a suitable language translation algorithm from the menu for one predetermined language. You cannot understand a voice output, when the text exists in the language which is not set to a language translation algorithm.

[0004] In various Field of application, a case to be operated by the user who chooses the language translation algorithm which belongs for receiving the text by predetermined language is inconvenient. Within a car, it is especially the field of the insurance of a driver, and it is advantageous if the voice output of the text is carried out. The condition that the language translation algorithm with which a driver checks the language of a text first and corresponds continuously must be searched for and chosen is conquered partially at least.

[0005] From the European Patent application public presentation No. 0889626 specification, the message transport unit for a communication link subscriber is well-known, and the equipment for the voice-told message (voice mail) recorded here is combined with E e-mail system. E-mail can be outputted to a subscriber with voice. In order to choose the right language translation algorithm suitable for a voice output, the alphabetic character combination (it has three alphabetic character sequences) of E-mail is inspected. Inference over the language currently used is drawn by the frequency of occurrence of an alphabetic character combination. This technique needs big cost for using equipment. With this kind of equipment, the big count capacity for the library to which the big resource in memory and a program operate and **** must be prepared. For this reason, for applying to especially a car, it is not desirable. Furthermore, when a message is short and the special concept by the divulgence word is added, distinction with the high dependability between similar language becomes difficult.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] the text which the technical problem of this invention offers the approach and audio output device which carry out the voice output of the text, and exists in various language -- efficient -- dependability -- it is reproducing highly and correctly.

[Translation done.]

MEANS

[Means for Solving the Problem] This technical problem inspects the characteristic word or characteristic abbreviation in a text by the microprocessor, changes a text into syllable using the algorithm which identifies the language of a text and is formed to the identified language, and is solved by reproducing through a loudspeaker. A technical problem again An actuation component, text memory, and a microprocessor, Have the output unit and the call to a user's Internet mail box is automatically performed by actuation of an actuation component. Loading of the E-mail which received a message is performed, and the language currently used in the text memorized by text memory by the microprocessor is identified based on a predetermined word or a predetermined abbreviation characteristic of language. It is changed into the phoneme by which the language with which the text was identified was digitized, and the phoneme digitized by the output unit constitutes the equipment outputted as language, and is solved. The advantageous operation gestalt of this invention is indicated by the subordination claim.

[0008]

[Embodiment of the Invention] Before starting a voice output, in a text, a predetermined word or a predetermined abbreviation characteristic of language is inspected, and the language of a text is identified. Based on the identified language, the algorithm for text voice outputs of dedication assigned to this identified language is chosen automatically. The phoneme formed artificially by this thru/or syllable, or voice is pronounced correctly.

[0009] For example, when the text in an alphabetic character reaches a private vehicle through radio wireless or a mobile radio especially a mobile phone, a radio data system (RDS), and a short message service (SMS), a text is reproduced by the language which was suitable without actuation by the driver for the language form of a text. This is meaningful especially for the business trip businessman who makes contact to the customer of a foreign language the usual state.

[Translation done.]

EXAMPLE

[Example] In relation to drawing, it is based on an advantageous example and other advantages of this invention, the description, and the possibility of application are explained.
[0011] The audio output device shown in drawing 1 is built into the multifunctional control unit of a car, and is controlled with automobile radio, a mobile phone, a navigation system, and an air-conditioner.
[0012] The microprocessor 1 has the text memory 2 and this memory is RAM. A microprocessor 1 receives a message, for example, E-mail, or FAX by wireless through a telephone module or the mobile radio unit 3.
[0013] By operating the push button shown by the only actuation component "E", for example, an alphabetic character, a user can operate a microprocessor 1, can form a connection with the mail box of an Internet provider, and can call the E-mail which has received a message. The received text is memorized by the text memory 2 and outputted without actuation of a user.
[0014] If the mobile radio unit 3 receives FAX, it will be changed at FAX in the word using the alphabetic character defined by the software for [as a pixel] text recognition in a contained text, and the text memory 2 will memorize. A microprocessor 1 loads the word which continued and was memorized by the text memory 2, digitizes this as a phoneme, and changes it into the sequence of voice or syllable.
[0015] The digitized phoneme is outputted to an output unit. This output unit consists of a digital to analog converter 4, voice amplifier 5, and at least one loudspeaker.
[0016] A digital to analog converter 4 changes the digitized phoneme into the sound signal of an analog. By voice amplifier 5, this signal is amplified to the loudness level of sound for which a user asks, and is reproduced in voice from a loudspeaker 6.
[0017] A microprocessor 1 inspects the appearance of a typical keyword and an alphabetic character combination in a text in the language which can process each language translation algorithm by this microprocessor. This kind of keyword is the platitude of a name and a greeting, for example, are "Sehr geehrte (r)", "Herr", "Frau", "Dear", "Cher", "Chere", etc. Furthermore, it is based on it and an identifiable article, a pronoun, a conjunction, etc. are simply used in language. The same thing is applied to a typical alphabetic character combination or a typical abbreviation, for example, "H.", "Hr.", "F.", "Fr.", "Mr.", "Ms.", "M.", and "Mme."
[0018] Since the text following a name and it may be held in different language, a microprocessor searchs within a text, after assigning the 1st keyword or the 1st typical alphabetic character combination to actual language. Conflict occurs, and when two or more language has been recognized in the identified characteristic word or characteristic alphabetic character, a decision in majority is made. In that case, a voice output is performed by the language most frequently found out in the text. For this reason, a clerical error does not result in the interpretation error of language.
[0019] The audio output device with which the digital signal processor 7 and Screen 8 for outputting information optically were formed additionally is formed in drawing 2 .
[0020] The mobile radio unit 3 receives text messages, and transmits this to a microprocessor 1. A microprocessor sends out a text to the text memory 2 further.
[0021] The digital signal processor 7 inspects a word characteristic of the language currently used in the text, and an alphabetic character combination, and in order to change language, it chooses the language translation algorithm of affiliation. The phoneme formed artificially is sent out from a signal processor 7 to output units 4, 5, and 6.
[0022] When the message received by the mobile radio unit 3 is FAX, the digital signal processor 7 performs text recognition and inspects the language of a text continuously at the 1st step, and changes the identified alphabetic character into a phoneme.

[Translation done.]

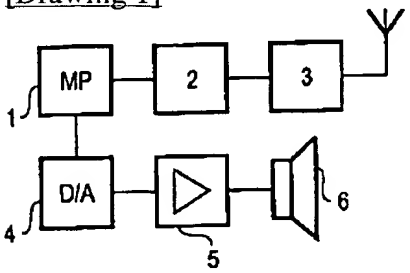
DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing showing the audio output device from which a text is changed into voice data by the central microprocessor.
[Drawing 2] It is drawing showing the audio output device which has a digital signal processor.
[Description of Notations]
1 Microprocessor
2 Text Memory
3 Mobile Radio Unit
4 Digital to Analog Converter
5 Voice Amplifier
6 Loudspeaker
7 Signal Processor
8 Screen

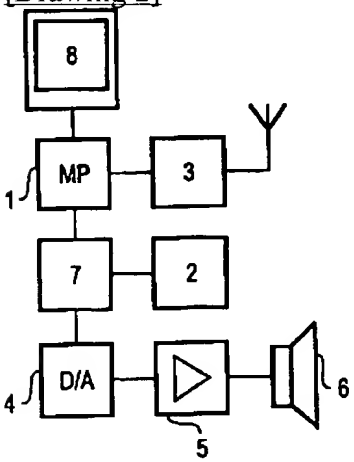
[Translation done.]

DRAWINGS

[Drawing 1]



[Drawing 2]



[Translation done.]

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-089776

(43)Date of publication of application : 31.03.2000

(51)Int.Cl. G10L 13/00

(21)Application number : 11-247601

(22)Date of filing : 01.09.1999

(71)Applicant : SIEMENS AG

(72)Inventor : FEHRMANN WALTER

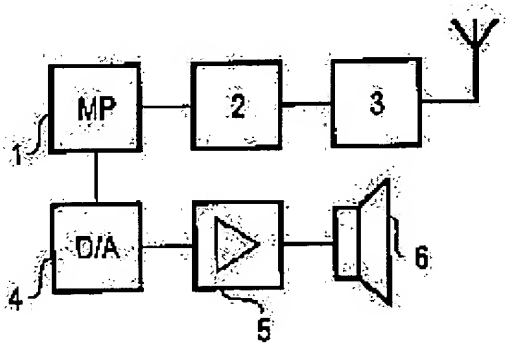
(30)Priority

Priority number : 98 19840890 Priority date : 03.09.1998 Priority country : DE

(54) METHOD FOR OUTPUTTING TEXT WITH SPEECH, AND SPEECH OUTPUTTING DEVICE FOR E-MAIL SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To efficiently, highly reliably and correctly reproduce a text written in various languages by checking characterizing words or abbreviations in the text by microprocessor and discriminating the language of the text, converting the test into syllables by using an algorithm which has been formed for the discriminated language and reproducing it through a loudspeaker.



SOLUTION: When a mobile wireless unit 3 receives a fax, a text contained in the fax as pixels is converted into words using defined characters by software for recognizing the text is stored in a text memory 2. Following this, a microprocessor 1 loads itself with the words stored in the text memory 2, and digitizes them as phoneme, and converts them into a sequence of speeches or syllables. A digital-analog converter 4 converts the digitized phoneme into an analog speech signal. This speech signal is amplified by a speech amplifier 5 and reproduced from a loudspeaker 6.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開2000－89776
（Ｐ2000－89776Ａ）
(43)公開日　平成12年３月31日(2000.3.31)

(51)Int.Cl.'	識別記号	ＦＩ		ﾃｰﾏｺｰﾄﾞ(参考)
Ｇ１０Ｌ　13/00		Ｇ１０Ｌ	3/00	Ｅ

審査請求　未請求　請求項の数５　ＯＬ　（全　４　頁）

(21)出願番号　特願平11－247601

(22)出願日　平成11年９月１日(1999.9.1)

(31)優先権主張番号　１９８４０８９０．０

(32)優先日　平成10年９月３日(1998.9.3)

(33)優先権主張国　ドイツ（ＤＥ）

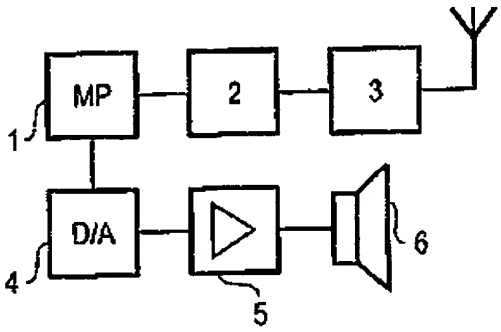
(71)出願人　390039413
シーメンス　アクチエンゲゼルシヤフト
ＳＩＥＭＥＮＳ　ＡＫＴＩＥＮＧＥＳＥＬＬＳＣＨＡＰＴ
ドイツ連邦共和国　Ｄ－80333　ミュンヘン　ヴィッテルスバッハープラッツ　２

(72)発明者　ヴァルター　フェールマン
ドイツ連邦共和国　ケーフェリング　レッシングシュトラーセ　８

(74)代理人　100061815
弁理士　矢野　敏雄　（外３名）

(54)【発明の名称】　テキストを音声出力する方法，およびＥメールシステムのための音声出力装置

(57)【要約】
【課題】　テキストを音声出力する方法および音声出力装置を提供して，種々の言語で存在しているテキストを効率よく，信頼性高くかつ正しく再生する。
【解決手段】　マイクロプロセッサによりテキスト中の特徴的な単語または略語を検査して，テキストの言語を識別し，識別された言語に対して形成されているアルゴリズムを用いてテキストを音節に変換し，スピーカを介して再生する。



1

【特許請求の範囲】

【請求項１】　マイクロプロセッサ（１）によりテキスト中の特徴的な単語または略語を検査して、テキストの言語を識別し、

識別された言語に対して形成されているアルゴリズムを用いて前記テキストを音節に変換し、スピーカを介して再生する、ことを特徴とするテキストを音声出力する方法。

【請求項２】　種々の言語の単語または文字コンビネーションを識別する際に最も頻繁に識別された言語を選択する、請求項１記載の方法。

【請求項３】　テキストを無線により車両内で受信し、車両のドライバーに出力する、請求項１または２記載の方法。

【請求項４】　移動無線ユニット（３）で受信された文字によるＦＡＸメッセージを解像し、音声的に出力する、請求項１または２記載の方法。

【請求項５】　移動無線ユニット（３）に結合されたＥメールシステムのための音声出力装置において、

操作素子と、テキストメモリ（２）と、マイクロプロセッサ（１、７）と、出力装置（４、５、６）とを有しており、

前記操作素子の操作により自動的に、ユーザのインターネットメールボックスへのコールが行われ、着信したＥメールのロードが行われ、

前記マイクロプロセッサにより、テキストメモリ（２）に記憶されたテキストで使用されている言語が所定の言語に特徴的な単語または略語に基づいて識別され、該テキストが識別された言語のディジタル化された音素に変換され、

前記出力装置によりディジタル化された音素が言語として出力される、ことを特徴とするＥメールシステムのための音声出力装置。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、テキストを音声出力する方法、および移動無線ユニットに結合されたＥメールシステムのための音声出力装置に関する。

【０００２】

【従来の技術】刊行物、ドイツ連邦共和国特許出願公開第１９５０３４１９号明細書から、ディジタルコーディングされた交通メッセージを人工的に形成した言語によって音声的に出力することが公知である。場所ないし地名に関連する単語は、所属のセンテンスがメモリから取り出されたのと同じ言語で言語形成装置へ供給される。外国語の単語と所属するセンテンスの音との適合化は音韻変換により行われる。

【０００３】Nisus Software, Inc. 社のテキスト処理プログラム Nisus(R) Writer から、記述されたテキストの音声出力または "朗読" が知られている。テキスト

2

を音声的に出力することのできる各言語に対して、固有の言語変換アルゴリズム（文・音声変換アルゴリズム）が使用されている。この種のアルゴリズムでは文字が音素または音節のシーケンスへ変換される。ユーザは所定の１つの言語のためのメニューから相応の言語変換アルゴリズムを選択する。テキストが言語変換アルゴリズムに定められていない言語で存在している場合には、音声出力は理解できないものとなる。

【０００４】種々の適用分野において不都合なのは、所定の言語によるテキストに対してこれに属する言語変換アルゴリズムを選択するユーザの操作が必要な場合である。特に車両内ではドライバーの安全の面で、テキストが音声出力されると有利である。ドライバーがまずテキストの言語をチェックし、続いて対応する言語変換アルゴリズムを探索して選択しなければならないような状態は少なくとも部分的に克服される。

【０００５】ヨーロッパ特許出願公開第０８８９６２６号明細書から、通信加入者のためのメッセージ伝達装置が公知であり、ここでは記録された音声メッセージ（ヴォイスメール）のための装置がＥメールシステムに結合されている。Ｅメールは音声により加入者へ出力することができる。音声出力に適した正しい言語変換アルゴリズムを選択するために、Ｅメールの文字コンビネーション（３つの文字シーケンスを有する）が検査される。文字コンビネーションの出現頻度により、使用されている言語に対する結論が導出される。この手法は装置を使用するのに大きなコストを必要とする。この種の装置ではメモリでの大きなリソース、プログラムの動作および相応するライブラリのための大きな計算能力を用意しなければならない。このため特に車両に適用するには望ましくない。さらに、メッセージが短く他言語による専門概念が加えられている場合には、類似の言語間での信頼性の高い判別が困難になる。

【０００６】

【発明が解決しようとする課題】本発明の課題は、テキストを音声出力する方法および音声出力装置を提供し、種々の言語で存在しているテキストを効率よく、信頼性高くかつ正確に再生することである。

【０００７】

【課題を解決するための手段】この課題は、マイクロプロセッサによりテキスト中の特徴的な単語または略語を検査して、テキストの言語を識別し、識別された言語に対して形成されているアルゴリズムを用いてテキストを音節に変換し、スピーカを介して再生することにより解決される。課題はまた、操作素子と、テキストメモリと、マイクロプロセッサと、出力装置とを有しており、操作素子の操作により自動的にユーザのインターネットメールボックスへのコールが行われ、着信したＥメールのロードが行われ、マイクロプロセッサによりテキストメモリに記憶されたテキストで使用されている言語が所

定の言語に特徴的な単語または略語に基づいて識別され．テキストが識別された言語のディジタル化された音素に変換され．出力装置によりディジタル化された音素が言語として出力される装置を構成して解決される。本発明の有利な実施形態は従属請求項に記載されている。

【０００８】

【発明の実施の形態】音声出力を開始する前に．テキストにおいて所定の言語に特徴的な単語または略語が検査され．テキストの言語が識別される。識別された言語に基づいて、この識別された言語に割り当てられた．専用のテキスト音声出力用アルゴリズムが自動的に選択される。これにより人工的に形成された音素ないし音節、または音声が正しく発音される。

【０００９】例えば文字によるテキストがラジオ無線または移動無線特に移動電話．ラジオデータシステム（ＲＤＳ）、ショートメッセージサービス（ＳＭＳ）を介して自家用車に送した場合．テキストはドライバーによる操作なしでテキストの言語形式に適した言語により再生される。これは例えば外国語の顧客とのコンタクトを意としている出張ビジネスマンにとって特に意義がある。

【００１０】

【実施例】本発明の他の利点、特徴および適用の可能性を図に関連して有利な実施例に即して説明する。

【００１１】図１に示された音声出力装置は車両の多機能操作部に組み込まれており、自動車ラジオ、移動電話．ナビゲーションシステム、およびエアコンディショナーとともに制御される。

【００１２】マイクロプロセッサ１はテキストメモリ２を有しており．このメモリはＲＡＭである。電話モジュールまたは移動無線ユニット３を介して、マイクロプロセッサ１は無線によりメッセージ例えばＥメールまたはＦＡＸを受信する。

【００１３】ユーザは唯一の操作素子．例えば文字"E"で示される押しボタンを操作することにより、マイクロプロセッサ１を作動させてインターネットプロバイダのメールボックスとのコネクションを形成し．着信しているＥメールを呼び出すことができる。受信されたテキストはテキストメモリ２に記憶され、ユーザの操作なしに出力される。

【００１４】移動無線ユニット３がＦＡＸを受信すると．ＦＡＸにビクセルとして含まれているテキストはテキスト認識用のソフトウェアにより定義された文字を用いた単語に変換され、テキストメモリ２に記憶される。マイクロプロセッサ１は続いてテキストメモリ２に記憶された単語をロードし、これを音素としてディジタル化し．音声または音節のシーケンスに変換する。

【００１５】ディジタル化された音素は出力装置へ出力される。この出力装置はディジタル／アナログ変換器４．音声増幅器５、および少なくとも１つのスピーカから成っている。

【００１６】ディジタル／アナログ変換器４はディジタル化された音素をアナログの音声信号に変換する。この信号は音声増幅器５によってユーザの所望する音量レベルまで増幅され．スピーカ６から音声的に再生される。

【００１７】マイクロプロセッサ１はテキストにおいて．このマイクロプロセッサでそれぞれの言語変換アルゴリズムを処理できる言語に典型的なキーワードおよび文字コンビネーションの出現を検査する。この種のキーワードは呼称および挨拶の決まり文句であり、例えば"Sehr geehrte(r)"．"Herr"．"Frau"．"Dear"、"Cher"、"Chere"などである。さらにはそれに即して簡単に言語を識別可能な冠詞．代名詞および接続詞なども用いられる。同様のことは典型的な文字コンビネーションまたは略語、例えば"H."．"Hr."、"F."、"Fr."、"Mr."．"Ms."、"M."、"Mme."にも当てはまる。

【００１８】呼称およびそれに続くテキストは異なる言語で保持されることがあるので、マイクロプロセッサは第１のキーワードまたは第１の典型的な文字コンビネーションを実際の言語に割り当てた後に．サーチをテキスト内で行う。矛盾が発生して、識別された特徴的な単語または文字により複数の言語が認識された場合には多数決での決定が行われる。その場合音声出力は最も頻繁にテキスト中に見出された言語によって行われる。このため誤記は言語の解釈誤りにはいたらない。

【００１９】図２には、付加的にディジタル信号プロセッサ７と、光学的に情報を出力するための画面８とが設けられた音声出力装置が設けられている。

【００２０】移動無線ユニット３はテキストメッセージを受信し、これをマイクロプロセッサ１へ伝送する。マイクロプロセッサはテキストをさらにテキストメモリ２へ送出する。

【００２１】ディジタル信号プロセッサ７はテキストにおいて使用されている言語に特徴的な単語および文字コンビネーションを検査し．言語を変換するために所属の言語変換アルゴリズムを選択する。人工的に形成された音素は信号プロセッサ７から出力装置４、５、６へ送出される。

【００２２】移動無線ユニット３によって受信されたメッセージがＦＡＸである場合には、ディジタル信号プロセッサ７は第１のステップでテキスト認識を行い．続いてテキストの言語を検査し．識別された文字を音素に変換する。

【図面の簡単な説明】

【図１】中央のマイクロプロセッサによりテキストが音声データへ変換される音声出力装置を示す図である。

【図２】ディジタルの信号プロセッサを有する音声出力装置を示す図である。

【符号の説明】

１　マイクロプロセッサ

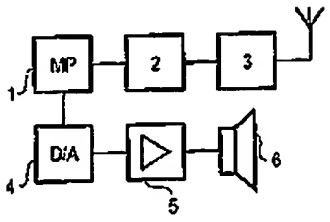
5

2　テキストメモリ
3　移動無線ユニット
4　ディジタル／アナログ変換器
5　音声増幅器

6

＊6　スピーカ
7　信号プロセッサ
8　画面
＊

【図１】



【図２】